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## Interactive service

The invention relates to an interactive service associated with distributed type transmissions, where the users of the service may influence the programme sent to them. The invention primarily relates to audio programmes.

From the prior art a method is known in which the listener/viewer of a programme phones his or her wish to the editor of the programme. Disadvantages of this method include slowness and randomness of the service. Another method is known in which a person may use his or her phone or computer to vote for various options given in the programme. Disadvantages of this method include the lack of personal service and relative slowness of the service.

An object of the invention is to reduce the above-mentioned disadvantages associated with the prior art. The method according to the invention for controlling a transmission facilitates subscriber-controlled contents of the transmission in real time. Moreover, user selections are collected automatically, which reduces the possibility of human errors in addition to reducing the delay brought about by the transmitting party responding to the user selections.

All above-mentioned advantages associated with the solution according to the invention can be advantageously realized by an embodiment in which synchronized options are sent in addition to the transmission to a GSM (Global System for Mobile Communications) communication device. User selections are delivered as SMS (Short Message Service) messages from the GSM communication device to a server which distributes the selection data to one or more transmitting parties, such as radio channels, for example. The radio channels may send response information to the user, change their transmissions according to the user selections or change the contents of a personal data packet, say an audio file, on the basis of the user selections.

The method according to the invention for providing an interactive programme service, in which method transmission control data are transferred from the terminal of a user of the service to the sender of the programme, and said control data are used for determining the contents of the transmission, and transmission is performed, is characterized in that

- said control data are sent from said terminal to a control forwarding node,
- said control data are transferred from the control forwarding node to the sender of the programme, and

- said determining of the contents of the transmission is realized automatically.

The arrangement according to the invention for providing an interactive programme service, which arrangement comprises a terminal of a user of the service, the sender of the programme, and a two-way communication system between these two, is characterized in that

- said communication system comprises a forwarding node for transferring transmission control data from the terminal to the sender of the programme,
- said sender of the programme comprises means for determining the contents of the transmission automatically according to said control data.

10 In this description and in the claims, the term "transmission" refers to the sending of a programme entity via radio transmitters of the distribution network or via a data network in an encoded form. A "sender" means in this description and in the claims a set of apparatus with which the programme sent to the users of the service is compiled and transmitted. A "forwarding node" means in this description and in the claims a place of storage for the control data coming from the users, the contents of which influence the transmissions. A "network address" means in this description and in the claims an information storage place in a server or terminal, to which the network address proper points.

Advantageous embodiments of the invention are described more closely in the following, referring to the drawings attached hereto.

Fig. 1 shows a block diagram of an embodiment of the invention,  
 Fig. 2 shows a block diagram of a second embodiment of the invention,  
 Fig. 3 shows a block diagram of a third embodiment of the invention,  
 Fig. 4 shows a block diagram of a fourth embodiment of the invention,  
 25 Fig. 5 shows a flow diagram of an embodiment of the inventive method, and  
 Fig. 6 shows a flow diagram of a second embodiment of the inventive method.

Fig. 1 shows an example of a system according to the invention. The forwarding node is a server 100 which typically is a world-wide-web server or web page in connection with the Internet, or a server in connection with the telephone network.

30 The senders 200, 201 typically are radio or television stations advantageously in a broadband radio connection with a terminal 300. The transmission path typically is e.g. a GSM, CDMA (Code Division Multiple Access), NMT, XDSL, UMTS (Universal Mobile Telephone Service), ADSL, Iridium, Teldesic and/or Inmarsat transmission path. The terminal 300 advantageously is a GSM, CDMA, NMT, XDSL,

UMTS, ADSL, Iridium, Teldesic and/or Inmarsat mobile station. The user 400 may advantageously make selections on his or her terminal 300 concerning the transmission and send his or her selections to the server 100 which forwards the selections to the senders 200, 201. Alternatively, the senders 200, 201 may inquire the server 100 for the selections. Based on the selections, the senders can control their transmissions and/or the personal transmission sent to the user 400 only.

A transmission advantageously includes options and/or instructions. The user 400 may e.g. vote his or her favourite song on a radio station's playlist or order additional information about advertisements of interest. Based on the information received from the users 400 the server and/or senders may send response information to the users, typically delivered by e-mail, SMS, voice mail and/or conventional letter mail or in some other way.

Fig. 2 shows a second example of a system according to the invention. The forwarding node in this case is a service page 600. The sender 200 is arranged so as to send the transmission to a network address 500. The transmission is advantageously packed into a user's personal transmission file which advantageously is an audio file or is in an FTP, Telnet, FTAM and/or SMS based format. Typically, however, the transmission file is an audio file. The user 400 receives transmission files at his or her terminal 300. The user 400 may advantageously influence the transmission by sending transmission control data, such as selections, to his or her service page 600 advantageously a world-wide web page, answering machine or some other means of storage in connection with the communication network.

The service page 600 may be advantageously arranged so as to send the transmission control data to the sender 200, or the sender 200 may be typically arranged so as to monitor the user feedback on the user's service page 600. Furthermore, it is obvious that the service page 600 may be located on the server 100 with a plurality of other service pages.

Fig. 3 shows an arrangement according to the inventive method on a larger scale. A sender 200 may be arranged so as to send individualized transmission files to a plurality of network addresses (500, 501, 502) and terminals (300, 301, 302). The sender 200 may advantageously monitor the feedback from a plurality of users on their respective service pages (600, 601, 602).

Fig. 4 shows an arrangement according to the inventive method on a larger scale. A plurality of senders 200, 201, 202 are advantageously arranged so as to transmit to a

network address 500. A given user and terminal 300 may advantageously observe a plurality of transmissions and send transmission control data for all of these to his or her service page 600. From the service page 600 the control data can be typically transferred to the senders 200, 201, 202, or optionally each sender 200, 201, 202 may initiate a connection to the service page 600 and transfer the desired information to itself.

In Fig. 5, transmission occurs in block 51, and the transmission is received at a terminal in step 52. After that, an optional service, such as mailing a brochure to a postal address, is selected in step 53. Next, this option selection is sent to the server, step 54, where the transmission control data are received 55.

In an advantageous embodiment, additional steps are taken after step 55. In this embodiment the subscriber, i.e. the user, is identified at the server, step 56. The server then requests the user to send the relevant information 57 if required by the optional service selected in step 53. Finally, a response is sent to the terminal either direct from the sender or server or from the sender via the server 58.

Fig. 6 shows a flow diagram of an embodiment 60 of the inventive method, characteristic of the arrangement depicted in Fig. 2. In step 61 a transmission file, such as an audio file, is sent to a network address where it is received 62. The transmission file is then sent to a terminal in step 63, where it is received, step 64. The user may make optional selections, which selections constitute the transmission control data that are sent to a service page in step 65, where said selections are received, step 66. The transmission control data are transmitted to the senders in step 67, and the senders receive the control data in step 68. At least one user's personal and/or public transmission is changed according to the control data received, step 69.

The above-mentioned embodiments of the invention have considerable advantages. The method according to the invention for controlling a transmission facilitates subscriber-controlled contents of the transmission in real time, and the user need not suffer from unnecessary delays. Furthermore, user selections are transferred in an automated manner in the form of data, reducing the possibility of human errors as well as reducing the delay associated with the response of the sender.

The invention was above described with reference to the embodiments discussed. However, it is obvious that the invention is not limited solely to those embodiments, but it covers all imaginable embodiments in accordance with the inventional idea defined by the independent claims.